

NOTES ON MECOPODIDAE (ORTHOPTERA, TETTIGONOIDEA)

by

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Through the kindness of Dr. B. P. UVAROV I had the opportunity to study some members of the family Mecopodidae, collected by Mr. T. H. ARDLEY in the Papuan region. They proved to be very interesting, all being new to science. Very little is done about the study of members of this family and only occasional, but no systematical collecting was done. The results of my study are presented in the following pages.

Eumossula gen. nov. (figs. 1—3, pl. 2)

Size large, body slender. Head about as long as the pronotum. Frons somewhat broader than high, seen in profile reclinate; subsmooth, upper part in the middle with an indication of a shallow median sulcus, below the middle in the lower part with on both sides a row of more or less regular low transverse ridges; cheek and vertex smooth; below the eye with an approximately triangular space, finely punctate with some low transverse ridges. Fastigium of vertex produced in front of the head into a small, somewhat triangular projection, not reaching beyond the middle of first antennal joint, its anterior margin obtuse or obtusely pointed, sometimes with an indication of an incision in the middle; from above with a shallow median sulcus, running from the apex posteriorly to about the line, connecting the hind margin of the eyes.

Antennal scrobae on the inner side lamellately produced, their lower margin thickened. First antennal joint broad, reaching beyond the apex of fastigium of vertex, second joint narrower and shorter than the first, third joint and remaining ones slender, third joint a little longer than the second. Eyes small, rounded, globose, prominent.

Pronotum somewhat longer than broad, its surface coarsely punctured with low, irregular ridges; anterior margin rounded, posterior margin truncate or slightly truncate — concave; median keel and lateral keels absent; disc with two transverse, concavely bent sulci, both percurrent on the lateral lobe, the posterior one in the middle of the disc more deeply impressed; a little above the lower margin of the lateral lobe these sulci are connected by a short, transverse, rounded sulcus; lateral lobe itself somewhat broader than high, lower margin angulately rounded, anterior and posterior margin nearly straight; anterior angle angulately rounded, posterior angle rounded. Elytra and wings reaching far beyond the top of abdomen and a little beyond the top of hind femur.

Elytron narrow, anterior and posterior margin nearly straight, narrowing

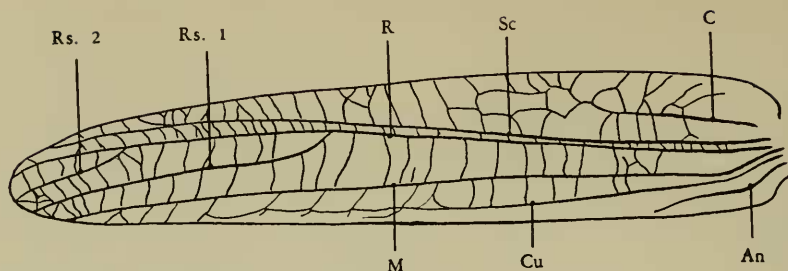


Fig. 1. *Eumossula gracilis* g. & sp. nov., female elytron

gradually from base to apex, at the apex narrowly rounded; anterior area about as broad as the others together. The venation is as follows. Costal vein only distinct in the basal fourth, nearly parallel to, but not terminating into the anterior margin, somewhat variable. Subcostal and radial veins terminating into or near the apex of elytron, distinctly separated by a narrow interspace, with rows of short transverse veins, especially at the basal part and at apical two-thirds.

Subcostal vein with irregular branches, reaching the anterior margin of elytron. Radial vein with its first branch in the apical third, second branch in the apical sixth part of the vein, both percurrent into the apical part of the posterior margin. Median vein substraight from base to apex and terminating into the posterior margin near the apex; there are no distinct branches. Cubital vein at the base parallel to, or connected with the anal vein; parallel to, and more or less terminating into the posterior margin. Anal vein straight, short. Anal field in the female with three curved, short veins.

Stridulating field of the left elytron in the male with a strong, elevated stridulating vein about in the middle; the remaining part of the field with an irregular and coarse reticulation. Speculum of the right elytron long oval, clear, hyaline, on all sides surrounded by a subhyaline area, with some poorly developed, irregular short veins.

Wing subcycloid, principal veins distinct. Costa distinct at the base; subcosta slightly curved, nearly reaching the top of the wing; radius with only one branch in the apical third, which branch is connected with the media by a short vein; media and cubitus united and connected a little behind the base, in the basal third there are two branches, the first reaching the posterior margin of wing, the second before the apex connected with the principal vein. There are 8 anal veins. Intercalated triangle absent. Anterior coxae with a spine from above. Legs slender. Anterior femur with a row of 2—3 spines on the lower inner margin in the apical part; lower outer margin without spines; inner and outer genicular lobe with a short spine. Anterior tibia from below on both sides with a row of spines; from above with an apical spine on the outer side; auditory foramina on both sides open, oval. Median femur from below on the outer margin with 2—3 spines; genicular lobes on both sides with a spine. Median tibia from below on both sides with a row of spines, from above on the inner side with a row of 2—6 spines or smooth, variable. Hind femur slightly incrassate at the base, apical half slender; from below on both sides with a row of spines, smooth from above; genicular lobes on both sides with a strong spine.



Eumossula gracilis gen. & spec. nov., ♂, holotype. New Ireland.
Author phot.

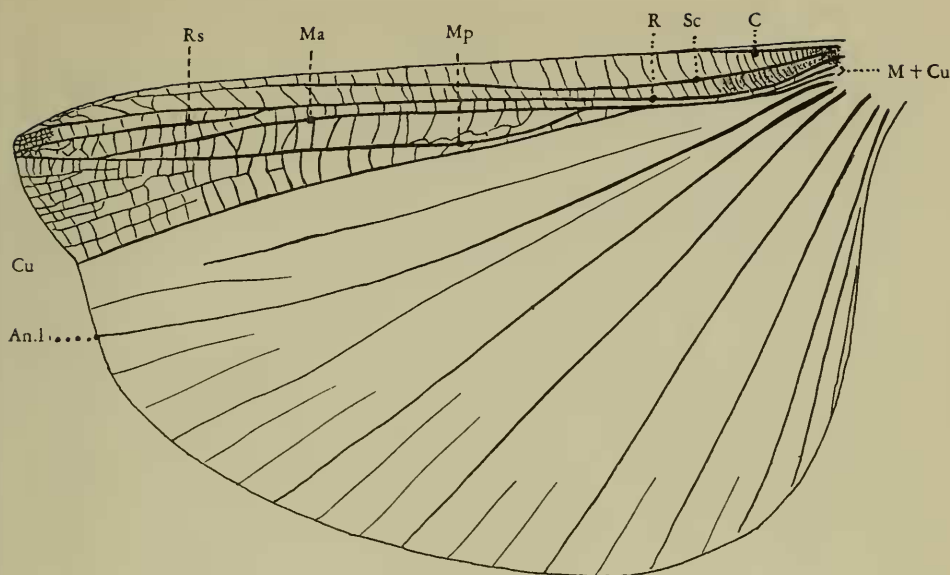


Fig. 2. *Eumossula gracilis* g. & sp. nov., female wing

Hind tibia with four rows of spines, the spines of the upper margins longer than those on the lower margins. Epimerum of prothorax with a distinct spine. Prosternum bispinose, the spines at the base not touching each other. Mesosternum broader than long, metasternum about as long as broad; their lobes rounded, obtuse.

Male: Ultimate tergite with the posterior margin rounded-truncate. Supraanal plate triangular, apex obtuse. Cercus cylindrical, slightly curved inwards from base to apex, at the apex more strongly curved and attenuated, and pointed, with at the extreme top a small hooked spine. Subgenital plate lamellate, much longer than broad, a little behind the base narrowed, with the margins nearly parallel; apex deeply and triangularly excised; styli very short, much shorter than the depth of the incision; disc of the plate with a longitudinal median keel, a similar keel on both sides.

Female: Posterior margin of ultimate tergite rounded-truncate. Supraanal plate long, triangular, apex obtusely pointed; pilose. Cercus cylindrical, as long as the supraanal plate, slightly curved, apex obtusely pointed. Ovipositor long, a little shorter than the hind femur, straight, margins smooth, not crenulate at the apex. Subgenital plate broader than long, hind margin with a deep, triangularly rounded incision.

Type of the genus: *Eumossula gracilis* spec. nov.

Eumossula gracilis spec. nov. (figs. 1—3, pl. 2)

General coloration yellowish brown. Head lighter coloured, with a whitish stripe along the clypeal margin, somewhat variable. First antennal joint whitish

brown, the following joints of the general coloration, with an indication of annulation by darker coloured joints. Pronotum of the general coloration, anterior and posterior margins sometimes darker coloured. Elytra greenish or brownish green, along the anterior margin in the female somewhat darker coloured, in the male darker coloured along the posterior margin; there are no dark spots. Wing hyaline, anterior area somewhat greenish. All the legs of the general coloration, femora with whitish transverse stripes on the outer side. Spines of hind tibiae with black tips. Hind tarsus from below blackish brown. Sternum and abdomen of the general coloration. Ovipositor dark reddish brown.

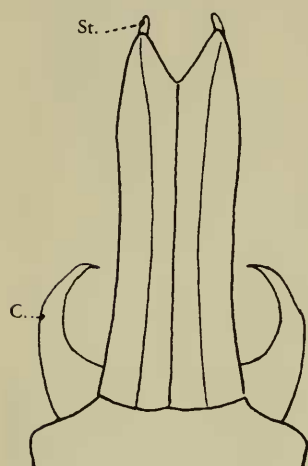


Fig. 3. *Eumossula gracilis* n. g. & sp. ♂. Subgenital plate

C. = cercus St. = stylus

	♂	♀
Length of body	50 mm	51 mm
" " head	7 "	8 "
" " pronotum	8 "	9 "
" " elytron	48—50 "	60 "
Width of elytron	9—10 "	11 "
Length of anterior femur	15—16 "	17 "
" " median femur	15 "	16 "
" " hind femur	37 "	43 "
Width of hind femur	5 "	6 "
Length of hind tibia	40 "	50 "
Length of ovipositor		40 "

Geographical distribution: New Ireland, Bismarck Islands.

Collected by T. H. ARDLEY, 2 ♂, 1 ♀. Figs. 1—4.

Holotype: ♂ paratype ♀ (New Ireland), at the Anti-Locust Research Centre, London.

The new genus belongs to the *Mossula* group and is related to the genus *Mossula*. It may be distinguished by the following key, containing all the genera, having the elytra distinctly longer than the abdomen, reaching (far) beyond the top of abdomen and with the metazona of disc of pronotum without distinct lateral keel or rugosities forming a kind of keel.

1. Elytron "coriaceous" with only the subcostal radial veins distinct and elevated, the medial and cubital veins very short; the areae filled out by an irregular rhomboidal reticulation. Form of elytron lanceolate, reaching only the apical third of hind femur or a little shorter. Distribution: Fiji Islands, Solomon Islands.

Ocica Walker (= *Elaeoptera* Redtenbacher syn. nov.)

- 1.1. Elytron not "coriaceous", veins distinct with normal reticulation; longer, reaching or nearly reaching the top of hind femur.
2. Pronotum smooth. Male styli about as long as the depth of the triangular incision of hind margin of subgenital plate. Female subgenital plate without median incision. Distribution: Solomon Islands.

Paramossula Willemsen

- 2.2. Pronotum coarsely punctured.
3. Elytron narrow. Styli of male subgenital plate very short. Male cercus slender, not divided at the top, but simple. Distribution: New Ireland.

Eumossula gen. nov.

- 3.3. Elytron broader. Styli of male subgenital plate long, about as long as the depth of the triangular incision of hind margin. Cercus of the male broad, bidentate at the top. Distribution: Solomon Islands, Trobriand Islands (N.E. coast of New Guinea), New Guinea, Ceram, Buru.

Mossula Walker

Segestidea hanoverana spec. nov. (pl. 3, 4 left)

Size large, body slender. Head, as seen from above, a little shorter (♂) or as long as (♀) the disc of pronotum. Frons as broad as high (♂) or somewhat broader than high (♀), seen in profile reclinate and somewhat concave; sub-smooth with regular, transverse, fine low ridges in the lower part above the clypeal margin; about in the middle with a shallow median impression more or less indicated; below the eye with a triangular space with a more irregular, shallow, transverse sculpture; cheeks for the remaining part and vertex practically smooth.

Fastigium of vertex produced in advance into a small, somewhat triangular projection, which is not reaching beyond the middle of the first antennal joint; anterior margin obtuse or obtusely pointed, its surface with a median shallow sulcus, running posteriorly to about a line connecting the hind margin of the eyes. Antennal scrobae with the inner and lower margin thickened, arcuately bent upwards till below the fastigium of vertex. First antennal joint long and broad, about two and a half times as long as broad, reaching distinctly beyond the fastigium of vertex, second joint much narrower and shorter, the remaining joints slender, filiform. Antennae long, reaching far behind the body. Eyes small, globose, somewhat prominent.

Pronotum coarsely and irregularly punctured, disc somewhat longer than broad, anterior margin slightly rounded, posterior margin subtruncate or slightly truncate-concave; median keel low, distinct, developed into a groove at the posterior transverse sulcus; lateral keels absent; disc with two transverse sulci, the first one a little behind the anterior margin and slightly concave, the second one a little behind the middle, somewhat concave or substraight, both sulci percurrent on the lateral lobe and connected with each other a little above the lower margin of the lobe in the anterior part of the lobe; in the male the sulci are less developed than in the female; lateral lobe about as broad as high or only a little higher, lower margin convex, with its lowest point about in the middle, anterior margin substraight, posterior margin straight, sinus humeralis only moderately developed; anterior angle angularly rounded, posterior angle broadly rounded.

Elytra and wings reaching far behind the top of abdomen and of top of hind femur. Elytron relatively narrow, anterior and posterior margin gradually narrowing apically; apex truncately rounded; between the subcosta and radialis with a narrow interspace with some transverse veinlets at the base and in the apical third; radialis with the first branch arising a little behind the middle of elytron, the second and third branch near the apex, all branches terminating into the apical margin.

Epimerum of prothorax terminating into a blunt short tooth. Anterior coxa with a spine. Anterior femur from below on the inner side with 2—3 small spines in the apical part, lobes of the knees with two spines on the inner and one on the outer side; anterior tibia from above on the outer side with an apical spine, from below on both sides with a regular row of 8—9 spines, auditory foramina in the male open at the inner side, semirimate at the outer side, in the female on both sides open. Median femur from below without spines or only one spine on the outer side near the apex, lobes of the knees with two spines; median tibia from

above with an inner apical spine; from below, on both sides, with a regular row of 9—10 spines.

Hind femur incrassate at the base, attenuate towards the apex, from below on both sides with a row of spines, lobes of knees with two spines; hind tibia with four rows of spines.

Prosternum with two spines, at the base not touching each other. Mesosternum about as long as broad, mesosternal lobes triangular with the apex rounded. Metasternal lobes about as long as broad, their lobes rounded. Hind margin of last tergites of the abdomen in the middle with a short spine, more or less developed.

Male: Ultimate tergite with the posterior margin truncate-concave. Supraanal plate triangular, apex more or less pointed; disc with a median sulcus. Paraproct, lying on both sides and below the supraanal plate with a very sharp pointed spine. Cercus cylindrical, curved inwards, apex somewhat narrowed and pointed with a short sharp tooth. Subgenital plate elongate, much longer as broad, in the middle narrowed, at the top deeply triangularly excised, with the margins of the incision finely crenulate and bearing at the top on both sides a very small, cylindrical stylus; disc with a median and on both sides a lateral longitudinal keel.

Female: Posterior margin of penultimate tergite rounded-truncate. Supraanal plate triangular, narrow, lateral margins somewhat concave, apex obtuse; disc with a median apical sulcus. Paraproct without spine. Cercus cylindrical, regularly curved, gradually attenuated towards the apex, apex pointed. Ovipositor long, straight, margins smooth. Subgenital plate broader than long, posterior margin with a rounded triangular incision in the middle and a short, shallow median groove.

General coloration brown to yellowish brown. Head light brownish or yellowish brown, along the clypeal margin of frons and greater part of lower margin of the cheek with a yellowish white stripe; cheek and vertex marmorated with some darker coloured, more or less regular spots or bands, variable. Cheek brown or dark brown with or without a yellowish white stripe, labrum of the general coloration. Antennae dark brown or brown, annulated with lighter coloured rings. Pronotum of the general coloration, marmorated with lighter or darker spots; its margins lighter coloured, sometimes with a dark stripe along the anterior margin or more uniformly coloured.

Elytron yellowish brown to brown, variegated with large dark brown spots in the different areas or with only small dark points in most of the areolae; posterior margin mostly bordered with brown; principal veins yellowish brown to brown. Wing hyaline, veins brown.

Anterior and median legs brown, femora with darker coloured transverse, narrow bands; tarsi blackish brown. Hind femur brown to yellowish brown; from below in the basal third with part of inner area and part of lower areae black or brownish black, very contrasting, the black area reaching the spines; outer and upper area with narrow, transverse, dark, incomplete stripes or more uniformly coloured; hind knee darker coloured, spines black or with black tips. Hind tibia of the general coloration, the extreme tip somewhat darker coloured; spines with black tips. Hind tarsus darker coloured, from below blackish brown. Sternum and abdomen of the general coloration. Pl. 3, 4 left.